



Work Order ID 62811

Friday, October 08, 2010 10:38:40 AM

Page 1

Item ID: D4153-1 Accept  Setup Start 
Revision ID: Stop 
Item Name: Joggle Bracket
Start Date: 10/8/2010 Start Qty: 4.00  Cust Item ID:
Required Date: 10/15/2010 Req'd Qty: 4.00  Customer:
Reference:

Approvals: Process Plan: H Date: 10/10/08 Tooling: _____ Date: _____ Run Start 
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop 

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D4153	A

110 0.00

 Waterjet **Memo** 0.00 10-10-12

FLOW CNC Waterjet CUT AS DWG A
304 .05 C DWG REV: A
PROG REV: A (4)

DEBURR

120 0.00

 QC2- Inspect parts off machine FAI/FAIB 0.00 10-10-12

QC **Memo** 0.00
Quality Control

MATERIAL CERTIFICATION
REQD UPON DELIVERY
10/10/13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____








NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			




NOTE: Date & initial all entries

Work Order ID 62811

Friday, October 08, 2010 10:38:40 AM

Page 2

Item ID:	D4153-1	Accept		Setup	Start	
Revision ID:						
Item Name:	Joggle Bracket				Stop	
Start Date:	10/8/2010	Start Qty:	4.00		Cust Item ID:	
Required Date:	10/15/2010	Req'd Qty:	4.00		Customer:	
Reference:						
Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start
	QC:	Date:	SPC (Y/N):	Date:		Stop
						
						

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130  QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.00		8/21/013		(x4)			
140  Brake NC Brake NC	Form as per dwg Memo	0.00 0.00		SB 10/10/07		(4)			
150  QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00		8/10/127		(x4)			

see Attached E-mail about
the deviation.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 62811

Friday, October 08, 2010 10:38:40 AM

Page 3

Item ID: D4153-1

Accept

Setup Start

Revision ID:

Stop

Item Name: Joggle Bracket

Start Date: 10/8/2010 Start Qty: 4.00

Cust Item ID:

Required Date: 10/15/2010 Req'd Qty: 4.00

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

Identify as per dwg & Stock Location: *5713420*

0.00



Packaging

Memo

PPM 63110 20

0.00

Packaging

[Signature]

10.10.27

(2)

170

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10.10.28

Deviation

per

MF 10-11-01

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 1

Friday, October 08, 2010 10:38:44 AM

Work Order ID: 62811



Parent Item: D4153-1



Parent Item Name: Joggle Bracket


Start Date: 10/8/2010

Required Date: 10/15/2010

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP Rev:A 10.10.06 new issue DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S18GA  304/316 .050 Sheet		Purchased	No			110	sf	99.6879	0.875	3.684211			



10-10-17

Location

Loc Qty

Loc Code

MAT20

99.6879

111743

6.55

112178

0.8

112885

0.1679

113062

40.17

115389

52

115389

④

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

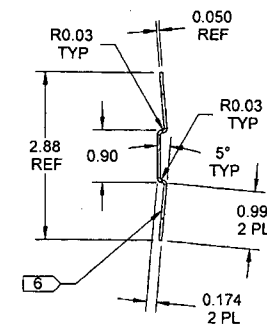
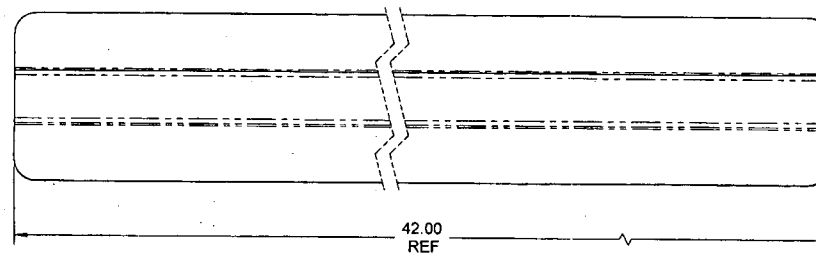
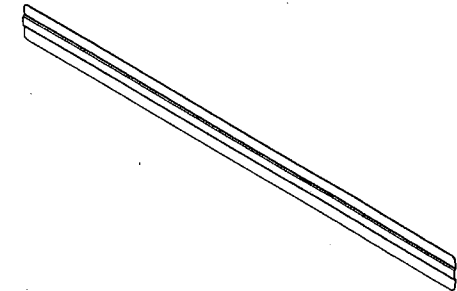
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

SHOP COPY
RETURN
ENGINEER
UNCONTROLLED
SUBJECT TO
WITH
WORK
NO. *4284*
10-1008



D4153-1 JOGGLE BRACKET
(MAKE FROM D4153-1F FLAT PATTERN)

RELEASED
2010-09-23
[Signature]

NOTES:

- 1) MATERIAL: MAKE FROM D4153-1F FLAT PATTERN
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: PER QSI 044 6.1, ON THE UNDERSIDE OF THE PART AS INDICATED
- 7) WEIGHT: 1.82 lbs

A	NEWISSUE	RF	10.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	RF	PORT HADLOCK, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D4153	SHEET 1 OF 2
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	JOGGLE BRACKET	NTS
DATE	10.09.16	COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE, OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8 7 6 5 4 3 2 1

D

D

C

C

B

B

A

A

R0.38
TYP

BEND LINE

3.00
2.00
1.91
1.09
1.00
0.00

0.050
REF

42.00

0.00

D4153-1F FLAT PATTERN

W/042811

RELEASED
2010-09-23
ND

NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SHEET ANNEALED 2B FINISH, 18 GAUGE (0.050 THICK)
PER MIL-S-5059
OR AMS 5513 (304)
OR AMS 5524 (316)
OR ASTM A240
OR ASME SA240
PER DART SPEC M304S18GA
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.82 lbs

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	RF	PORT HADLOCK, WA	
CHECKED	ND	DRAWING NO.	REV. A
MFG. APPR.	ND	D4153	SHEET 2 OF 2
APPROVED	ND	TITLE	SCALE
DE APPR.	ND	JOGGLE BRACKET	NTS
DATE	10.09.16	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

8 7 6 5 4 3 2 1

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Receiving Report

Date: 10/19

Batch No: 113389

Supplier: Cummins

Dart P/O: 12339

Packing Slip: Yes ☒ No ☐
 Invoice: Yes ☐ No ☒
 Receipt: Cash ☐ Cr ☒

Release Note Attached: Yes ☒ No ☐ N/A ☐
 Waybill Attached: Yes ☐ No ☒ N/A ☐
 Shipment Complete: Yes ☒ No ☐ N/A ☐
 QC6 Inspection 8 N/A ☒
 Work Order 100101 N/A ☒

Discrepancies

Part Number	Description	Quantity Ordered	Quantity Received	Quantity Returned	Quantity Short	Comments

Initials of receiver (If shipment OK) Level 12 SP

Production/Admin: _____
 Date _____
 Received/Costing _____
 Initial _____

Location _____



935, boul. du Havre
Valleyfield (Québec)
J6S 5L1

TELEPHONE: 450 377-4248
FAX: 450 377-5696

MONTREAL: 514 336-4248
FAX: 514 336-4246

ONTARIO: 1 800 667-4248
FAX: 1 866 456-4242

DISTRIBUTEUR D'ACIER ET METAUX SPECIALISES
STEEL AND SPECIALTY METALS DISTRIBUTOR

On a du Savoir "FER"

VENDU A / SOLD TO:

613-632-5200

613-632-1053

EXPEDIEZ A / SHIP TO:

DART AEROSPACE LTD
1270 ABERDEEN STREET
HAWKESBURY,
ONTARIO
K6A 1K7

DART AEROSPACE LTD
1270 ABERDEEN STREET
HAWKESBURY,
ONTARIO
K6A 1K7

COMMANDE
ORDER N° 168391

DATE 28/07/10

BON DE LIVRAISON
PACKING SLIP N°

DATE DE LIVRAISON
DELIVERY DATE 09/08/10

VOTRE N° DE COMMANDE / YOUR P.O. N°	VEND. / SALESM.	CODE CLIENT / CUST. CODE	EXPEDIE PAR / SHIP VIA	TERMES / TERMS	TERR.	REMARQUES / REMARKS	PAGE N°
p012339	D	DAE 241		NET 30 JOURS	2R		001

CODE DE PRODUIT PRODUCT CODE	COMMANDE ORDERED	EXPEDIE SHIPPED	DESCRIPTION	POIDS WEIGHT	PRX PRICE	PAR PER *	MONTANT AMOUNT
PSS4820G	3	3X	S.S. 304 2B 20 JA 48 X 96 3 SHEET OF 48 X 96 HEAT: 0579299	147.00	✓		
PSS4816G	3	3X	S.S. 304 2B 16 JA 48 X 96 3 SHEET OF 48 X 96 HEAT: 001V2	252.00	✓		
M	2	2X	ALUM. 5052-H32 .050 48 X 96 2 SHEET 48 X 96 HEAT: K468826	2.00	✓		
M	1	1X	ALUM. 6061-T6 .081 48 X 96 1 SHEET 48 X 144 HEAT: 731793	1.00	✓		
M	12	1X12	S304 FLAT BAR 3/8 X 3 1 X HEAT: 2FBD	12.00	✓		
FUL	1		ENERGETIC SURCHARGE	1.00			

* Unités de mesure: CLG Cent livres
Units of measure: Hundred pounds • CPI Contopieds
Hundred feet • UN Unit • PI Pied
Foot • PC Pied carré
Square foot

CONDITIONS:

LES MATERIAUX LIVRES ET FACTURES TELS QUE DECRIITS DEMEURENT LA PROPRIETE DE "ACIER CAMP INC." JUSQU'A PAYEMENT COMPLET
ENCASSÉ. • LES RISQUES DE PERTES D'UN BÉN SONT A LA CHARGE DE L'ACHETEUR. • LA GARANTIE DE QUALITE DU MATERIEL EST LA MEME QUE CELLE
DU FABRICANT. • L'ACHETEUR S'ENGAGE A RESPECTER LES CONDITIONS SUIVANTES: NET 30 JOURS DE LA DATE DE FACTURATION ET TOUT COMPTE
IMPAYE DANS LES 30 JOURS ENTRAINE DES FRAIS DE 2% PAR MOIS (24% PAR ANNEE) QU'IL ACCEPTE DE PAYER. • TOUT DEFAUT D'EXECUTION L'UNE OU
L'AUTRE DES OBLIGATIONS EN VERTU DU PRESENT CONTRAT ENTRAINERA LA DECISION DU VENDEUR A SON CHOIX DE RECLAMER
TOUT SOLDE DU PRODUIT DE VENTE OU REPRISE DU BIEN VENDU. • TOUTE RECLAMATION DOIT ETRE FAITE DANS LES CINQ JOURS SUR PRESENTATION DE
CE DOCUMENT. • TOUTE MARCHANDISE ENDOMMAGEE, ALTEREE OU COUPEE NE PEUT ETRE REPRISE. • AUCUN RETOUR DE MARCHANDISE NE SERA
ACCUSE SANS NOTRE AUTORISATION. • TOUTE MARCHANDISE RETOURNEE EST SUJETTE A DES FRAIS DE MANUTENTION DE 25%.

CONDITIONS:

ALL SOLD AND DELIVERED MATERIALS REMAIN THE PROPERTY OF "ACIER CAMP INC." UNTIL PAYMENT IS MADE IN FULL, COMPLETE AND CASHED.
ALL COST MATERIALS ARE AT THE BUYER'S EXPENSE. • ALL MATERIALS BEAR THE SAME WARRANTY AS GIVEN BY THE MANUFACTURER.
THE BUYER HEREBY ACCEPTS TO RESPECT THE FOLLOWING CONDITIONS: NET 30 DAYS FROM BILLING DATE AND THE BUYER ACCEPTS TO PAY
ADMINISTRATION CHARGES OF 2% PER MONTH OR 24% PER ANNUM ON ALL PAST DUE ACCOUNTS OVER 30 DAYS. • ANY DEFAULT IN RESPECT WITH
THIS CONTRACT WILL LEAD TO PAYMENT BY ACCELERATION AND PERMITS TO THE SELLER, AT HIS CHOICE TO CLAIM FOR THE BALANCE DUE OR THE
REPOSSESSION OF THE GOODS SOLD. • ANY CLAIM MUST BE MADE WITHIN FIVE DAYS WITH THIS DOCUMENT ENCLOSED. • ANY MERCHANDISE THAT
HAS BEEN DAMAGED, CUT OR MODIFIED CANNOT BE RETURNED. • ALL GOODS RETURNED MUST BE WITH OUR AUTHORIZATION AND ARE SUBJECT
TO A 25% RESTOCKING CHARGE.

MARCHANDISE RECUE EN BONNE CONDITION MERCHANDISE RECEIVED IN GOOD CONDITION

PREPARE / PREPARED

VERIFIE / VERIFIED

PAR 9

BY

LIVRE / DELIVERED

HEURE / TIME

PAR 390

BY 10:15

X 5

2010 08 09

SIGNATURE DU CLIENT / CUSTOMER'S SIGNATURE

DATE

SOUS-TOTAL
SUB TOTAL

T.P.S.
G.S.T.

T.V.Q.
Q.S.T.

TOTAL

ENR. TPS / GST REG. N° R 135 534 717 • N° ENR. TVQ / QST REG. N° 1 015 668 543



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PO REPRINT

Purchase Order ID PO12339

Purchase Order Date 7/28/2010

PO Print Date 7/28/2010

Page Number 1 of 2

Order From : VC-CAM002

CAMPI STEEL
935 BOUL. DU HAVRE
VALLEYFIELD, QC J6S 5L1
CA

Contact Name
Vendor Phone 800 667 4248
Vendor Fax 450 377 5696
Vendor Account Nbr

Buyer
Requisition Nbr
Tax Resale Nbr 10127-2607
Terms Net 30
Currency CAD
FOB

Brigitte Golden

revised

Ship To : DART AEROSPACE LTD 1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req. Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	M304S20GA	304/316 .040 Sheet	7/30/2010 Yes	96.00 sf	Yours ppd	\$4.5600	\$437.76
		Special Inst: Purchase Mat: AISI 304/316 SS SHEET ANNEALED 2B FINISH SPEC: MIL-S-5059 OR AMS 5513(304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240 48 X 96					
2	M304S16GA	304/316 Sheet .063	7/30/2010 Yes	96.00 sf	Yours ppd	\$5.8260	\$559.30
		Special Inst: Purchase Mat: AISI 304/316 SS SHEET ANNEALED 2B FINISH SPEC: MIL-S-5059 OR AMS 5513(304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240 48 X 96					
3	M5052H32S.050	5052-H32 .050 Sheet	7/30/2010 Yes	64.00 sf	Yours ppd	\$2.3438	\$150.00
		Special Inst: PURCHASE MAT: 5052-H32					

7/28/2010



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PO REPRINT

Purchase Order ID PO12339

Purchase Order Date 7/28/2010

PO Print Date 7/28/2010

Page Number 2 of 2

Order From : VC-CAM002
CAMPI STEEL
935 BOUL. DU HAVRE
VALLEYFIELD, QC J6S 5L1
CA

Contact Name
Vendor Phone 800 667 4248
Vendor Fax 450 377 5696
Vendor Account Nbr

Buyer
Requisition Nbr
Tax Resale Nbr 10127-2607
Terms Net 30
Currency CAD
FOB

Brigitte Golden

		ALUMINUM SHEET SPEC: QQ-A-250/8 OR AMS-QQ-A- 250/8 OR AMS 4016 OR ASTM B209 48 X 96			
4	M6061T6S.080 ✓	6061-T6 .080 Sheet	7/30/2010 Yes	48.00 sf	Yours ppd
		Special Inst:	PURCHASE MAT: 6061-T6/T62 ALUMINUM SHEET SPEC: QQ-A-250/11 OR AMS-QQ-A- 250/11 OR AMS 4025 IR ANS 4027 IR ASTM B209 48 X 144		
5	M304B0.375X03.000 ✓	M304 SS bar .375 x 3.00	7/30/2010 Yes	12.00 f	Yours ppd
		Special Inst:	Purchase Mat: AISI 304/316 SS BAR(NOTE: AISI 303 NOT ACCEPTABLE) SPEC: ASTM A276		
PO Total:					\$1,517.02

Change Nbr: 3

Change Date: 7/28/2010

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required when applicable

L Lacelle

From: denis [denis@aciercampi.com]
Sent: July 28, 2010 1:53 PM
To: 'L Lacelle'
Subject: RE: rfq
hello

au plaisir de vous servir!
Denis Quenneville
Acier Campi inc.
www.aciercampi.com

De : L Lacelle [mailto:llacelle@dartaero.com]
Envoyé : 28 juillet 2010 11:01
À : 'denis'
Objet : FW: rfq

Denis????????????????

M304B 0.375 x 3.000

And 304 bar .375 x 3.00 145.00\$/12'

From: L Lacelle [mailto:llacelle@dartaero.com]
Sent: July 27, 2010 11:11 AM
To: 'denis'
Cc: 'Brigitte Golden'
Subject: RE: rfq

And
128sf x 6061T6 sheet .080

From: L Lacelle [mailto:llacelle@dartaero.com]
Sent: July 27, 2010 11:02 AM
To: 'denis'
Cc: 'Brigitte Golden'
Subject: rfq

Bonjour,
P & D please:

92sf x 304 sheet .040
92sf x 304 sheet .063
64sf x 5052H32 sheet .050

Thank You,
Linda Lacelle
Production Manager
Dart Aerospace Ltd

7/28/10

01-07-2007 L. ROTINI

METALLURGICAL TEST REPORT

Certificate: 329654 01 Mail To:

Ship To:

Date: 9/21/2006 Page: 2

Customer: 0590 001

Steel: 304

Finish: 2B

Your Order: 191

NAS Order: AN 0353248 06

Corrosion: ASTM A262/02aE/180Bend-OK

PRODUCT DESCRIPTION:

STAINLESS STEEL COIL, COLD ROLLED, ANNEALED AND PICKLED.
ASTMA240/04a, 480/06, 666/03, ASMESA240/04-A05, 480/04-A05, SA666/04
Q05766D-A X MG FRM, AMS5513H X MRK&FIN, MIL5059D, AMD3, X CRWN MEAS

REMARKS:

Material free from mercury contamination. No weld repairs.
EN 10204 3.1 PED 97/23/EC Annex1, Para. 4.3 QQS763F Cond A
Material is RoHS-Compliant

Solomon

Skid #	Prod #	Thickness	Width	Weight	Length	Mark	Pieces	COMMODITY CODE
22VK18	* 010JV2	.0600	3.8300	1,165 SKID	1470.0		1	
22VK19	* 010JV2	.0600	3.8300	4,625 SKID	1457.4		4	
22VK20	* 010JV2	.0600	3.8300	1,155 SKID	1457.4		1	

CHEMICAL ANALYSIS

CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa)

Heat	CM	C	CR	CU	MN	MO	N	NI	P	S	SI
00JV2	US	.063	18.482	.338	1.747	.320	.067	8.159	.030	.001	.201

MECHANICAL PROPERTIES

Skid #	Prod #	Id o i c r	UTS KSI	.2% YS KSI	ELONG %-2"	Hard RB	Tail Hard
22VK18	010JV2	F T	94.03	42.59	57.73	81.50	84.50
22VK19	010JV2	F T	94.03	42.59	57.73	81.50	84.50
22VK20	010JV2	F T	94.03	42.59	57.73	81.50	84.50

1 sp x 16

814hs

QC ENGINEER

9/21/2006

**CERTIFICATION OF PROPERTIES AND
CHEMICAL ANALYSIS**

SOLD TO:

SHIP TO:

5/10/09

PRINT DATE:
2010/03/25

CUST PO: C62330

LOAD: SU46

ALLOY: 5052

PACK: 52663638

TEMPER: H32

CUST PART #:

COIL: K46882C

GAUGE: 0.0500 in

SALES ORDER: 76040333-0010

NET WT: 6603 lbs

WIDTH: 48.000 in

MECHANICAL SPECIFICATIONS:

GAUGE LENGTH = 2.00 in

QQ-A-250/8F, AMS-QQ-A-250/8, ASTM B209-07, AMS 4016, ASME SB 209

I certify that the materials detailed herein have been tested and that documentary evidence of the test or release certificate is on file.

Per

David Carter
Process Leader

Location: FRONT END		UOM	TEMPER	TEST DATE
UTS	L:32.0	ksi	H32	23-MAR-2010
YTS	L:24.4	ksi	H32	23-MAR-2010
Elongation	L:11	%	H32	23-MAR-2010
Tensile Thickness	L:0.0476	in	H32	23-MAR-2010
Location: BACK END		UOM	TEMPER	TEST DATE
UTS	L:32.1	ksi	H32	23-MAR-2010
YTS	L:24.6	ksi	H32	23-MAR-2010
Elongation	L:13	%	H32	23-MAR-2010
Tensile Thickness	L:0.0481	in	H32	23-MAR-2010

Chemistry
***** LAYER: 01 *****

Al 97.0356 Si 0.1331 Fe 0.2404 Cu 0.0239 Mn 0.0655 Mg 2.2751 Cr 0.1716 Ni 0.0058 Zn 0.0100
Ti 0.0074 Be 0.0001 Pb 0.0012 Ga 0.0151 V 0.0123
BACH: 0.0151 TOTAL: 0.0374

57
03/30/10

52663638
03-06-851

T

Process Date: 2010/03/22 22:44:00

Machine: TL1

Pack No: 52663638

Coil (Trace) No: K46882C

Alloy: 5052

Temper: H32

Width: 48.000 in.

Nominal Gauge: 0.0500 in.

Upper Spec Limit: 0.0500 in.

Lower Spec Limit: 0.0465 in.

MEASURED VALUES AND STATISTICS

Avg. Gauge: 0.0471 in.

Avg. Gauge % from Nominal: -5.74 %

3 Sigma: 0.00032 in.

3 Sigma: 0.69 %

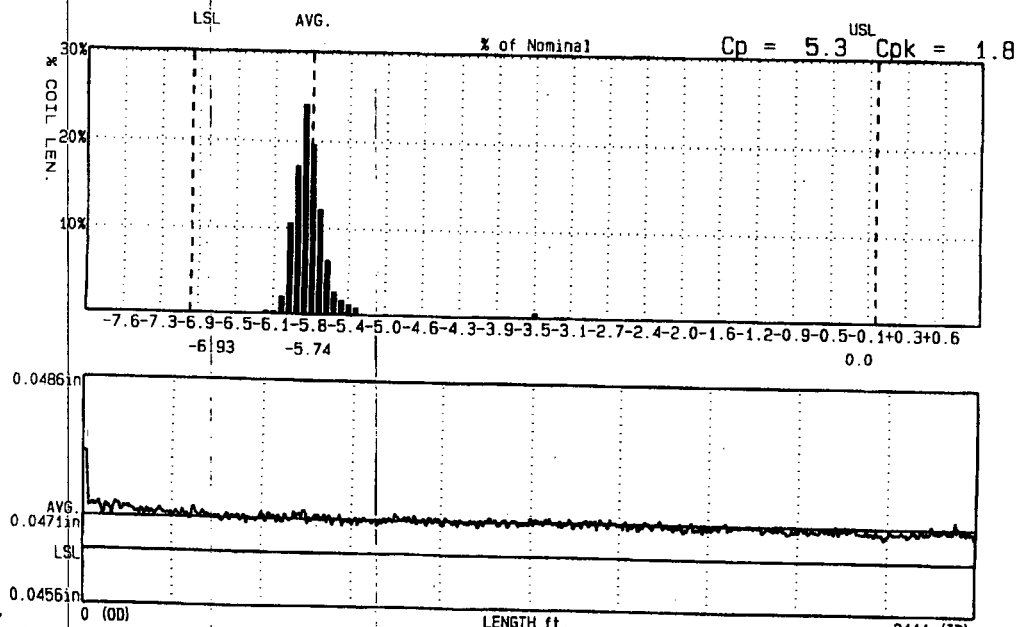
Max. Gauge: 0.0483 in.

Min. Gauge: 0.0469 in.

Coil Length: 2444 ft.

Weight: 5603 lb.

Yield: 0.370 ft/lb



CERTIFIED INSPECTION REPORT

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.
Per:

Malcolm Murphy
Director of Manufacturing Davenport Works

Kenton P. Young
Quality Assurance Manager

Ship From:

1112305	0				
Ship Date	B.L. No.	Invoice No.	Alcoa No.	Item	Page 1
2010-04-10	4774446	00000	1000186573-1		DCE-86573-1
P.O. No./Govt Contract No.	Customer				
C62077	Ln#: 1				

Ship To:

Item Description

0.08 IN TK (+0.0000 - .0045) X 48.0 IN W (+.125 - .125) X 144.0 IN LN (+.15625 - .15625) CAT D 126901 (N) A/T 6061-T6 FLAT SHEET FOR DISTRIBUTORS TOLERANCE GUARANTEED. AMS4027 REV N ANS1H35.2 REV 2009 EXC_MRK ASME-SB-209 REV 07 EXC_MRK ASTM B209 REV 07 ((MARKED)) KRAFT PAPER INTERLEAVED
MAX GROSS SKID WGT: 4750 LB. QUAN_TOL +/- 30 * CQR D126901 REV 39 CUST REQ 10-04-10 *** W/E 10-05-01 ***

Num	Package Ticket	Lot	Weight	Quantity	UOM	Inspector Clock Numbers
1	201623	731793	3883	75	PC	27109 47004
2	201630	731793	3161	61	PC	27109 47004
			7044	136		

Notes for CQR: D126901.39

PRODUCT PRODUCED TO THE REQUIREMENTS OF AMS4027 REV N ALSO MEET THE REQUIREMENTS OF AMS-QQ-A-250.11 ORIGINAL REVISION DATED 1997-08-01.

CQR: D126901.39 -Specification Limits

Temp	Dir	UTS	TYS	EL4D	
T6	Long Transv.	Max	KSI	KSI	PCT
		Min	42.0	35.0	10

Chemical Composition	SI	FE	CU	MN	MG	CR	ZN	TI	Other	Total Aluminum
Alloy 6061	Max	0.8	0.7	0.40	0.15	1.2	0.35	0.25	0.15	0.05
Lot: 731793	Min	0.40		0.15		0.8	0.04			REMAIN

Temp	Dir	UTS	TYS	EL4D	
T6	Long Transv.	Test	KSI	KSI	PCT
		10	48.2	44.3	10.6
			48.1	44.1	10.7

CERTIFIED INSPECTION REPORT

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

Per:

Malcolm Murphy

Malcolm Murphy
Director of Manufacturing Davenport Works

Kenton P. Young

Kenton P. Young
Quality Assurance Manager

Ship From:

1112305	0.				
Ship Date	B.L. No.	Invoice No.	Alcoa No.	Item	Page 2
2010-04-10	4774446	00000	1000186573-1		DCE-86573-1
P.O. No./Govt Contract No.	Customer				
C62077 Ln#: 1					

Lot: 731793 - Mechanical, Physical, Metallography, Quantometer Results (cont.) -----

47.9	44	10.5
48	44	11.1
48	44	10.8
48	43.9	11
47.8	43.8	10.3
47.8	43.7	11
48.2	44.1	11.2
48.3	44.3	10.8

Cast Number	Chemical	OES	SI	FE	CU	MN	MG	CR	ZN	TI
H8110022	Actuals		0.66	0.5	0.24	0.07	1.0	0.19	0.03	0.02

This material was melted in the United States or a Qualifying Country [REF DFARS 225.872.1(a)]; it was manufactured in the United States

001/001

TOTAL P.002

CERTIFICATION OF TEST

Sold To:

Ship To:

CUSTOMER ORDER#: C80839
DATE SHIPPED: 12/20/07
SIZE: 3" X 3/8" HRAP
SOURCE: USA D
VENDOR: NAS

Phone#: 5492803
ORDER#: 153863
QTY SHIPPED: 1110.0
GRADE: 304
HEAT#: 2F80
TEST REPORT#: TR007284
Report Date: 10/22/07

Ext:

NO WELD: BAR

Specification:

CHEMISTRY THIS COLUMN:

ASTM A276-05A COND. A
ASME SA276-05A COND. A
ASTM A479-05A, S2.1
ASME SA479-05A, S2.1
QQ-S-788P, COND. A
QQ-S-788D, COND. A

ASTM A262, PRACTICE E
CORROSION OK, HRAP
ASTM A484-05A
ASME SA484-05A
NO WELD REPAIR
EN 10204 3.1.B

ASTM A240-05A
ASME SA240-05A
MILS 5059D AMEND 3
AMS 5689H & AMS 5647H
ASTM A480-05
ASME SA480-05

TYPE 304
UNS# 30400

MERCURY IS NOT USED BY US AS AN ALLOYING MATERIAL NOR IS METALLIC MERCURY HANDLED IN THE VICINITY OF OUR PROCESSING LINES. WE ARE NOT PRESENTLY AWARE OF ANY MERCURY CONTAMINATION. MATERIAL HAS BEEN HEATED TO A MINIMUM OF 1800 DEG. F AND IS SUBSEQUENTLY COOLED RAPIDLY TO PREVENT CARBIDE PRECIPITATION.

Chemical Analysis

C	MN	P	S	SI	CR	NI	MO	CU	CO	NO
.065	1.708	.030	.002	.229	16.379	8.073	.424	.417	0	.001

Physical Analysis

	YIELD		TENSILE		OTHER	
Hardness	PSI	MPA	PSI	MPA	Percent El.	Percent RA
RD 89	48870	0	93000	0	48.9	66.6

THE CHEMICAL ANALYSES ARE CORRECT AS CONTAINED IN OUR CORPORATE RECORDS.
PHYSICAL PROPERTIES ARE DETERMINED WHILE MATERIAL IS IN STRIP FORM.

Melbed & Manufactured in the USA

CERTIFIED BY:

Jerry Enfi

burned

P.002

JAN-23-2008 08:33

L Lacelle

From: David Shepherd [dshepherd@dartaero.com]

Sent: October 25, 2010 2:32 PM

To: 'L Lacelle'; 'Robert Fuentes'

Cc: 'Mike Petsche'; 'David Duval'

Subject: RE: D4153-1 - 139 kits

Linda,

Let's try the 0.25" as a deviation on the first part for conformity.

Question: Why wasn't this picked up during the manufacturing review of the part?

David

From: L Lacelle [mailto:llacelle@dartaero.com]

Sent: Monday, October 25, 2010 11:59 AM

To: 'Robert Fuentes'; 'David Shepherd'

Subject: D4153-1 - 139 kits

Hi Guys,

Miss me?

Anyhoooo....in order to make this D4153-1, we would have to purchase an offset die at 1200.00 !! OR we could make the height around 0.25 (like the D3641's) instead of 0.174...please let me know if this is acceptable asap

Thank You,

Linda Lacelle

Production Manager

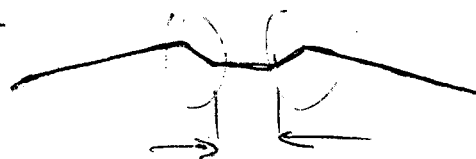
Dart Aerospace Ltd

No virus found in this incoming message.

Checked by AVG - www.avg.com

Version: 8.5.448 / Virus Database: 271.1.1/3212 - Release Date: 10/25/10 06:34:00

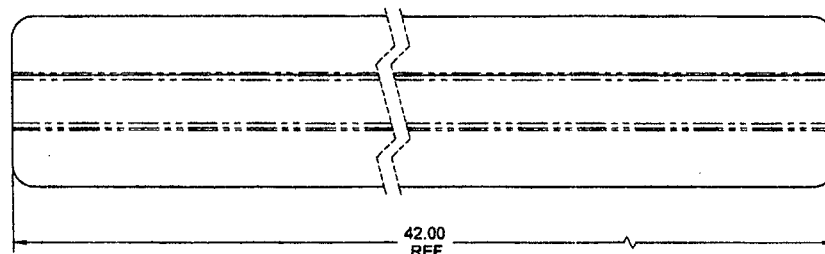
10/25/10'



How small ~~got~~ we go
could.

Is it possible to make
0.90" dimension smaller

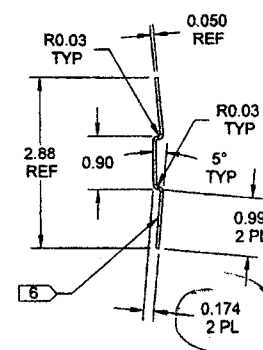
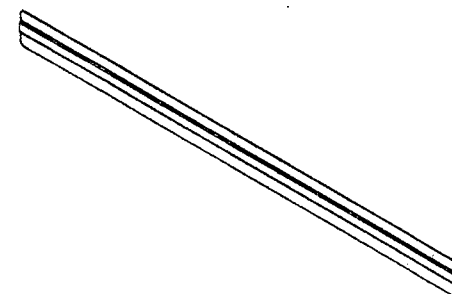
That way it would
be possible to make
0.174" but we would
need make a more
pronounce degree.



D4153-1 JOGGLE BRACKET
(MAKE FROM D4153-1F FLAT PATTERN)

NOTES:

- 1) MATERIAL: MAKE FROM D4153-1F FLAT PATTERN
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: PER QSI 044 6.1, ON THE UNDERSIDE OF THE PART AS INDICATED
- 7) WEIGHT: 1.82 lbs



RELEASED
2010-09-23
MD

A NEW ISSUE		RF	10.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	RF		
DRAWN	RF		
CHECKED	RF		
MFG. APPR.	RF		
APPROVED	RF		
DE APPR.	RF		
DATE	10.09.16		

DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWING NO. D4153	REV. A
TITLE JOGGLE BRACKET	SHEET 1 OF 2
SCALE NTS	

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WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

We are able to achieve this.

